REMARKS

In light of the following remarks, reconsideration of the present application is requested. Claims 1-28 are pending in this application. Claims 1, 11, 17 and 23 are independent claims. Claim 11 is amended. No new matter has been added.

Rejections under 35 U.S.C. § 101

Claims 11-16 stand rejected under 35 U.S.C. § 101 as being directed to non-functional descriptive material. Applicants respectfully traverse this rejection for the reasons detailed below.

Applicants respectfully submit that "a computer readable medium having an executable data structure for managing multiple reproduction paths recorded thereon," as recited in independent claim 11, recites functional descriptive material.

MPEP § 2106.01 states the following:

> In this context, "functional descriptive material" consists of **data structures** and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5ᵗʰ ed. 1993).) "Nonfunctional descriptive material" includes but is not limited music, literary works and a compilation or mere arrangement of data.
> (emphasis added)

Data structures recorded on a computer readable medium may constitute statutory subject matter.

MPEP § 2106.01 goes on further to state:

> Both types of "descriptive material" are nonstatutory when claimed as descriptive material *per se*, [In re Warmerdam,] 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare In re Lowry, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (discussing patentable

weight of data structure limitations in the context of a statutory claim to a data structure stored on a computer readable medium that increases computer efficiency) and <u>Warmerdam</u>, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with <u>Warmerdam</u>, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure *per se* held nonstatutory).

In view of the above, a more detailed discuss of <u>In re Warmerdam</u> and <u>In re Lowry</u> is warranted.

Discussion of In re Warmerdam

Claim 1 of <u>In re Warmerdam</u> recited:

> 1. A method for generating a data structure which represents the shape of [sic] physical object in a position and/or motion control machine as a hierarchy of bubbles, comprising the steps of:
>
> first locating the medial axis of the object; and
>
> then creating a hierarchy of bubbles on the medial axis.

Claim 6 of <u>In re Warmerdam</u> recited:

> 6. A data structure generated by the method of any of Claims 1 through 4.

With respect to claim 1, the court found both steps drawn strictly to mathematical equations, and therefore non-statutory abstract ideas. <u>In re Warmerdam</u>, at 1759. The court went on to find that the data structure of claim 6 suffers from the same defect.

Discussion of In re Lowry

Claim 1 of <u>In re Lowry</u> recited:

> 1. A memory for storing data for access by an application program being executed on a data processing system, comprising:
>
> a data structure stored in said memory, said data structure including information resident in a database used by said application program and including:
>
> a plurality of attribute data objects stored in said memory, each of

said attribute data objects containing different information from said database;

a single holder attribute data object for each of said attribute data objects, each of said holder attribute data objects being one of said plurality of attribute data objects, a being-held relationship existing between each attribute data object and its holder attribute data object, and each of said attribute data objects having a being-held relationship with only a single other attribute data object, thereby establishing a hierarchy of said plurality of attribute data objects;

a referent attribute data object for at least one of said attribute data objects, said referent attribute data object being nonhierarchically related to a holder attribute data object for the same at least one of said attribute data objects and also being one of said plurality of attribute data objects, attribute data objects for which there exist only holder attribute data objects being called element data objects, and attribute data objects for which there also exist referent attribute data objects being called relation data objects; and

an apex data object stored in said memory and having no being-held relationship with any of said attribute data objects, however, at least one of said attribute data objects having a being-held relationship with said apex data object.

In finding that the printed matter cases have no factual relevance to the claims

at issue in In re Lowry, the court stated:

> Nor are the data structures analogous to printed matter. Lowry's ADOs do not represent merely underlying data in a database. ADOs contain both information used by application programs and information regarding their physical interrelationships within a memory. Lowry's claims dictate how application programs manage information. Thus, Lowry's claims define functional characteristics of the memory.

> In re Lowry, at 1034.

The court further noted:

> Indeed, Lowry does not seek to patent the Attributive data model in the abstract. Nor does he seek to patent the content of information resident in a database. Rather, Lowry's data structures impose a physical organization on the data.

In re Lowry, at 1034.

And, on the issue of abstract ideas, the Federal Circuit in In re Lowry

noted:

> More than mere abstraction, the data structures are specific
> electrical or magnetic structural elements in a memory. According
> to Lowry, the data structures provide tangible benefits: data stored
> in accordance with the claimed data structures are more easily
> accessed, stored, and erased. Lowry further notes that, unlike
> prior art data structures, Lowry's data structures simultaneously
> represent complex data accurately and enable powerful nested
> operations. In short, Lowry's data structures are physical entities
> that provide increased efficiency in computer operation.

In re Lowry, at 1035.

The claims at issue (e.g., claim 11) are analogous to the claims in In re Lowry,

and as such are clearly statutory subject matter. Unlike the claims of In re

Warmerdam, the claims of the subject application do not recite mathematical

equations, or the generation of data structures using mathematical equations.

Instead, as in In re Lowry, claim 11 recites a computer readable medium storing a

specific data structure that dictates how application programs reproduce data.

Accordingly, because the computer readable medium recited in claim 11 includes a

data structure having an data area, which provides "a data stream section for

prohibiting reproduction path re-change after reproduction path change, based on a

buffering condition," claim 11 is clearly directed towards patentable, statutory subject

matter.

In the language of MPEP §2106.01 regarding *functional* descriptive material, "a

claimed computer-readable medium encoded with a data structure defines structural

and functional interrelationships between the data structure and the computer

software and hardware components which permit the data structure's functionality to be realized, and is thus statutory." Therefore, claim 11 is patentable.

In light of the above, Applicants respectfully request that the rejection of independent claim 11, and claims depending therefrom, under 35 U.S.C. § 101 be withdrawn.[1]

Rejections under 35 U.S.C. § 103

Claims 1-9 and 11-28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamane et al. (U.S. Patent No. 5,784,528), hereinafter "Yamane," in view of Kikuchi et al. (U.S. Patent No. 6,577,811), hereinafter "Kikuchi." Claim 10 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Yamane in view of Kikuchi and further in view of Fujiwara et al. (U.S. Patent No. 6,683,989), hereinafter "Fujiwara." Applicants respectfully traverse these rejections for the reasons detailed below.

Claim 1

Claim 1 requires, *inter alia*, a data stream section "which prohibits reproduction path re-change after reproduction path change, based on a buffering condition." This feature is not disclosed or suggested by Yamane or Kikuchi, either in combination or alone.[2]

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[1] The Examiner may also find it helpful to review AT&T Corp. v. Excel Communications Inc., 50 USPQ2d 1447 (Fed. Cir. 1999).

[2] To be thorough, further expedite prosecution, and for the sake of clarity, Applicants provide discussions of each of the references separately, however, Applicants are not attacking these references individually, but arguing that the references, even taken in combination, fail to render the claimed invention obvious because all features of claim 1 are not found in the prior art.

Yamane discloses a method and an apparatus for interleaving a bit stream wherein split data units for a defined volume of data for each of a plurality of scenes are distributed at an appropriate level, to prevent a data underflow state. However, Yamane does not disclose or suggest prohibiting a reproduction path re-change.

Kikuchi discloses a recorded contents protection scheme wherein a user operation control VOBU_UOP_CTL describes user operations which are prohibited during the display period of a video object unit VOBU. During a cell playback an MPU (or CPU) 30 executes a process for prohibiting the user's operations using the user control information VOBU_UOP_CTL. The user's operation prohibition operation includes prohibiting angle switching when the user presses an angle key on a remote controller 5.[3]

The Examiner relies upon the prohibition operation of Kikuchi, as disclosed in column 69, lines 38-42, to teach the data stream section which, "prohibits reproduction path re-change after reproduction path change, based on a buffering condition," of claim 1. Applicants respectfully disagree.

First, column 69, lines 38-42, does not disclose prohibiting a path re-change after a reproduction path change. Lines 38-42 recite that the "prohibition operation includes a process for prohibiting angle switching <u>when the user presses angle key</u> 5ang on remote controller 5." Accordingly, the prohibition operation of Kikuchi does not prohibit "a path re-change after a reproduction path change," as required by claim 1. By contrast, Kikuchi prohibits a user operation upon pressing a key on a remote controller.

Second, the prohibition operation of Kikuchi is not based on a buffering condition. As discussed above, Kikuchi prohibits a user operation based on user

control information VOBU_UOP_CTL. Kikuchi fails to disclose or suggesting using a buffering condition to prohibit a user operation. Accordingly, Kikuchi does not prohibit a path re-change "based on a buffering condition," as required by claim 1. Instead, Kikuchi prohibits a user operation based on user control information VOBU_UOP_CTL.

Claim 1 is patentable because Yamane and Kikuchi, either alone or in combination, fail to disclose or suggest a data stream section "which prohibits reproduction path re-change after reproduction path change, based on a buffering condition." The claims dependent on claim 1 are patentable for at least the reasons set forth above with regard to claim 1.

Independent claims 11, 17 and 23, and their respective dependent claims, are patentable for somewhat similar reasons as those discussed above regarding claim 1.

For at least the foregoing reasons, Applicants respectfully request that the rejections of these claims be withdrawn.

Claim 10

The Examiner correctly acknowledges that the features of claim 10 are absent from Yamane in view of Kikuchi, but alleges that these features are taught by Fujiwara, thereby rendering claim 10 obvious to one of ordinary skill at the time of the invention. Even assuming *arguendo* that the features of claim 10 are taught by Fujiwara (which Applicants do not admit) and that Fujiwara could be properly combined with Yamane and Kikuchi (which Applicants do not admit), Yamane, Kikuchi and Fujiwara are still deficient with respect to the above-described features of

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[3] See the discussion in column 69, lines 25-42.

claim 1. Thus, even in combination, Yamane, Kikuchi and Fujiwara fail to render claim 10 obvious.

CONCLUSION

In view of the above remarks and amendments, the Applicants respectfully submit that each of the pending objections and rejections has been addressed and overcome, placing the present application in condition for allowance. A notice to that effect is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to contact the undersigned.
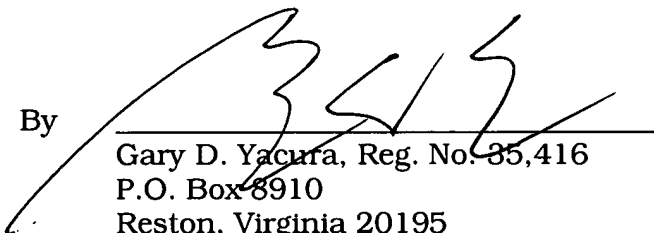
Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the undersigned at the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

HARNESS, DICKEY, & PIERCE, P.L.C.

By

Gary D. Yacura, Reg. No. 35,416
P.O. Box 8910
Reston, Virginia 20195
(703) 668-8000

GDY/BMH